

**Example #8:** A 3.5 kg cart explodes away from a 5.0 kg cart at 2.0 m/s. What is the velocity of the larger cart?

→ use conservation of momentum:

before

$$P_T = 0$$

after

$$P_T = 3.5(2) + 5.0v$$

$$0 = 7 + 5v$$

$$v = -1.4 \text{ m/s}$$

(1.4 m/s in the opposite direction)